

DISCUSSION OF THE AMENDMENT

Due to the length of the specification herein, Applicants will cite to the paragraph number of the published patent application (PG Pub) of the present application, i.e., US 2007/0167653, when discussing the application description, both in this section and in the Remarks section, *infra*, rather than to page and line of the specification as filed.

Claim 1 has been amended as supported in the specification at paragraph [0067].

In addition, the claims have been amended from plural to singular format. All multiple dependency has been removed. Antecedent basis has been inserted where applicable.

New Claims 11-18 have been added. Claim 11 is supported by Claim 10. Claim 12 is supported by Claim 8. Claims 13-16 are supported in the specification at paragraph [0079]. Claims 17-18 are supported by Claim 4.

**Submitted herewith** is a copy of Reichardt, Solvent Effects in Organic Chemistry, 1979, pages 241-242, for further understanding of the subject matter of new Claims 13-16.

No new matter is believed to have been added by the above amendment. Claims 1-18 are now pending in the application.

REMARKS

The rejection of Claims 1-10 under 35 U.S.C. § 103(a) as unpatentable over US 5,942,290 (Leppard et al), is respectfully traversed.

As recited in above-amended Claim 1, an embodiment of the present invention is a process for the preparation of an acylphosphine oxide solid with a melting point above room temperature, which comprises converting the acylphosphine oxide present following reaction or work-up as a continuous melt phase or disperse melt phase into the solid state of aggregation with externally exerted mechanical stress of the melt during solidification, whereby the melt internally flows, shears or is internally agitated.

As described in the specification beginning at paragraph [0002], the preparation of solid acylphosphine oxides is known, and a number of examples are listed, such as DE 3139984 (DE '984), discussed *infra*. As described at paragraph [0003], according to this prior art, acylphosphine oxides with final purity and in the form of a disperse solid are obtained by crystallizing them from the reaction mixture or a solution. The solvent present in the crystallization solution may already have been present in the reaction or it is added as a solvent in the work-up, in particular in a recrystallization. Crystallization from a solution is disadvantageous, as described, at paragraphs [0004]-[0009]. Applicants have been able to successfully address these problems by the present invention, as set forth above.

Leppard et al is drawn to molecular complex compounds comprising mono- and bisacylphosphine oxides with  $\alpha$ -hydroxy ketones and to the use of these molecular complex compounds as photoinitiators (column 1, lines 5-8). Leppard et al discloses further that their molecular complex compounds can be prepared, for example, by generally known methods of growing crystals, for example from solution or melt methods (column 1, lines 33-35). The melt method involves melting the molecular complex compounds and then slowly cooling the melt (paragraph bridging columns 2 and 3), including the embodiment of melting each of the

components of the molecular complex compounds individually and mixing the compounds in the melted state (column 2, lines 63-64), which embodiment is relied on by the Examiner.

The Examiner acknowledges that Leppard et al fails to disclose external stress, shearing, and/or internal agitation but nevertheless, holds that it would have been obvious to employ such external stress, shearing, and/or internal agitation because Leppard et al discloses the compounds mixed in the melted state (column 2, lines 63-64), which would motivate an ordinarily skilled artisan to apply shearing or agitation to accomplish the disclosed mixing."

In reply, the presently-claimed invention is not mixing melted components to form a mixture by externally exerting mechanical stress but rather, employing such externally exerted mechanical stress to a continuous or disperse melt phase into the solid state by aggregation. The present claims now explicitly require that the external mechanical stress be exerted **during solidification**. Thus, even if such stress were applied in Leppard et al for purposes of mixing, the result would not be the presently-claimed invention..

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1-3 under 35 U.S.C. § 103(a) as unpatentable over above-discussed DE '984 in view of the literature reference XP-002311790 (Becker et al), is respectfully traversed. At the Examiner's request, an English translation of both DE '984 and Becker et al is **submitted herewith**. As discussed above, DE '984 is an example of prior art processes for preparing solid acylphosphine oxides, obtained in final purified form by crystallization. Becker et al is drawn to crystallization from a melt, and promotion of such crystallization by grinding. Even if DE '984 and Becker et al were combined, the result would not meet the terms of the present claims, since Becker et al does not disclose such grinding or other treatment **during solidification**. Indeed, the rationale in the International Preliminary Report on Patentability (IPRP) in the corresponding international application was

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that the claims did not require that mechanical stress continue to be applied during solidification. That requirement is now in the claims. Accordingly, it is respectfully requested that the rejection be withdrawn.

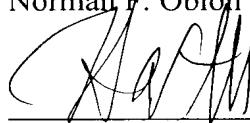
The objection to Claims 4-10 is now moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that the objection be withdrawn.

All of the presently-pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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